

Application No : 09/932,677
By: D. F. Weaver, et al.

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Please amend the application as follows:

In the Claims:

All claims that will be pending, whether or not amended, upon entry of the present amendment are presented for Examiner's convenience.

Please *cancel* claims 70-77, 79, 81-91, 94-117, and 120-137, drawn to non-elected subject matter, without waiver or prejudice. Please also cancel claims 69, 78, 80, 92-93, 118-119, and 139-141 without waiver or prejudice, and substitute therefor new claims 143-186, which are presented below.

Please *amend* claims 68, 138, and 142 as follows:

01 68. (Twice Amended) A method of inhibiting epileptogenesis, comprising administering to a subject in need thereof an effective amount of a substituted β -amino anionic compound, comprising an amino group, an anionic group, and a two-carbon spacer unit, wherein said anionic group is a group that is negatively charged at physiological pH; and said amino group is $-NR^aR^b$, wherein R^a and R^b are each independently hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, alkylcarbonyl, arylcarbonyl, alkoxycarbonyl, or aryloxy carbonyl; or R^a and R^b , taken together with the nitrogen to which they are attached, form an unsubstituted or substituted heterocycle having from 3 to 7 atoms in the heterocyclic ring, wherein said amino group and said anionic group are separated by said two-carbon spacer unit;

wherein said two-carbon spacer unit may be substituted with a substituent selected from the group consisting of halogen, hydroxyl, alkylcarbonyloxy, arylcarbonyloxy, alkoxycarbonyloxy, aryloxy carbonyloxy, carboxylate, alkylcarbonyl, alkoxycarbonyl, aminocarbonyl, alkylthiocarbonyl, alkoxyl, phosphate, phosphonate, phosphinate, cyano, amino, acylamino, amidino, imino, sulfhydryl, alkylthio, arylthio, thiocarboxylate, sulfates, sulfonate, sulfamoyl, sulfonamido, nitro, trifluoromethyl, azido, heterocyclyl, aromatic, and heteroaromatic moieties;

or a pharmaceutically acceptable salt or ester thereof, such that epileptogenesis is inhibited.

02 138. (Twice Amended) A method for treating a convulsive disorder, comprising administering to a subject in need thereof an effective amount of a substituted β -amino anionic compound, comprising an amino group, an anionic group, and a two-carbon spacer unit,

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wherein

said anionic group is a group that is negatively charged at physiological pH; and
said amino group is $-NR^aR^b$, wherein R^a and R^b are each independently hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, alkylcarbonyl, arylcarbonyl, alkoxycarbonyl, or aryloxy carbonyl; or R^a and R^b , taken together with the nitrogen to which they are attached, form an unsubstituted or substituted heterocycle having from 3 to 7 atoms in the heterocyclic ring, wherein said amino group and said anionic group are separated by said two-carbon spacer unit;

wherein said two-carbon spacer unit may be substituted with a substituent selected from the group consisting of halogen, hydroxyl, alkylcarbonyloxy, arylcarbonyloxy, alkoxycarbonyloxy, aryloxy carbonyloxy, carboxylate, alkylcarbonyl, alkoxycarbonyl, aminocarbonyl, alkylthiocarbonyl, alkoxyl, phosphate, phosphonate, phosphinato, cyano, amino, acylamino, amidino, imino, sulfhydryl, alkylthio, arylthio, thiocarboxylate, sulfates, sulfonate, sulfamoyl, sulfonamido, nitro, trifluoromethyl, azido, heterocyclyl, aromatic, and heteroaromatic moieties;

or a pharmaceutically acceptable salt or ester thereof, such that said convulsive disorder is treated.

142. (Amended) A method for treating a convulsive disorder, comprising administering to a subject in need thereof an effective amount of a substituted β -amino anionic compound, comprising an amino group, an anionic group, and a two-carbon spacer unit, wherein
said anionic group is a group that is negatively charged at physiological pH; and
said amino group is $-NR^aR^b$, wherein R^a and R^b are each independently hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, alkylcarbonyl, arylcarbonyl, alkoxycarbonyl, or aryloxy carbonyl; or R^a and R^b , taken together with the nitrogen to which they are attached, form an unsubstituted or substituted heterocycle having from 3 to 7 atoms in the heterocyclic ring, wherein said amino group and said anionic group are separated by said two-carbon spacer unit;

wherein said two-carbon spacer unit may be substituted with a substituent selected from the group consisting of halogen, hydroxyl, alkylcarbonyloxy, arylcarbonyloxy, alkoxycarbonyloxy, aryloxy carbonyloxy, carboxylate, alkylcarbonyl, alkoxycarbonyl, aminocarbonyl, alkylthiocarbonyl, alkoxyl, phosphate, phosphonate, phosphinato, cyano, amino, acylamino, amidino, imino, sulfhydryl, alkylthio, arylthio, thiocarboxylate, sulfates, sulfonate, sulfamoyl, sulfonamido, nitro, trifluoromethyl, azido, heterocyclyl, aromatic, and heteroaromatic moieties;

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03 or a pharmaceutically acceptable salt or ester thereof, such that epileptogenesis is inhibited.

Please *add new* claims 143-186 as follows:

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143. (New) The method of any one of claims 68, 138, or 142, wherein said anionic group is a carboxylate, sulfate, sulfonate, sulfinate, sulfamate, tetrazolyl, phosphate, phosphonate, phosphinate, or phosphorothioate moiety.
144. (New) The method of claim 143, wherein said anionic group is a carboxylate moiety.
145. (New) The method of any one of claims 68, 138, or 142, wherein R^a and R^b are each independently hydrogen, alkyl, alkylcarbonyl; or R^a and R^b , taken together with the nitrogen to which they are attached, form an unsubstituted or substituted heterocycle having from 3 to 7 atoms in the heterocyclic ring.
146. (New) The method of any one of claims 68, 138, or 142, wherein said two-carbon spacer unit is substituted with an amino substituent, wherein said amino substituent is an alkyl amino, dialkylamino, arylamino, diarylamino, or alkylarylamino moiety.
147. (New) The method of any one of claims 68, 138, or 142, wherein said two-carbon spacer unit is substituted with an acylamino substituent, wherein said acylamino substituent is an alkylcarbonylamino, arylcarbonylamino, carbamoyl, or ureido moiety.
148. (New) The method of any one of claims 68, 138, or 142, wherein
said anionic group is a carboxylate;
said two-carbon spacer unit is substituted with a substituent selected from the group consisting of aromatic and alkoxy moieties; and
 R^a and R^b are each independently hydrogen, alkyl, or alkylcarbonyl; or R^a and R^b , taken together with the nitrogen to which they are attached, form an unsubstituted or substituted heterocycle having from 3 to 7 atoms in the heterocyclic ring.
149. (New) The method of any one of claims 68, 138, or 142, wherein said two-carbon spacer unit is substituted with a substituent selected from the group consisting of substituted aromatic moieties.

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150. (New) The method of claim 149, wherein said substituted aromatic or substituted aryloxy moiety is substituted with a substituent selected from the group consisting of halogens, hydroxyl, alkoxyl, amino, alkylamino, dialkylamino, arylamino, alkylcarbonylamino, and aromatic moieties.
151. (New) The method of any one of claims 68, 138, or 142, wherein said two-carbon spacer unit is substituted with a substituent selected from the group consisting of carboxylate, alkylcarbonyl, alkoxycarbonyl, aminocarbonyl, alkylthiocarbonyl, phosphonato, phosphinato, acylamino, amidino, imino, thiocarboxylate, sulfonato, sulfamoyl, sulfonamido, nitro, trifluoromethyl, heterocyclyl, aromatic, and heteroaromatic moieties.
152. (New) The method of any one of claims 68, 138, or 142, wherein said two-carbon spacer unit is substituted with a substituent selected from the group consisting of carboxylate, alkylcarbonyl, alkoxycarbonyl, aminocarbonyl, alkylthiocarbonyl, heterocyclyl, aromatic, and heteroaromatic moieties.
153. (New) The method of any one of claims 68, 138, or 142, wherein said two-carbon spacer unit is substituted with a substituent selected from the group consisting of carboxylate, alkylcarbonyl, alkoxycarbonyl, aminocarbonyl, and alkylthiocarbonyl moieties.
154. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is an α -substituted β -alanine.
155. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is an α,α -disubstituted β -alanine.
156. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is an α,β -disubstituted β -alanine.
157. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is a β,β -disubstituted β -alanine.
158. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is an α,β,α -trisubstituted β -alanine.
159. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is an α,β,β -trisubstituted β -alanine.

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160. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is an $\alpha,\alpha,\beta,\beta$ -tetrasubstituted β -alanine.
161. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is a β -substituted β -alanine.
162. (New) The method of any one of claims 68, 138, or 142, wherein the said β -substituted β -alanine is β -substituted with a substituent selected from the group consisting of heterocyclyl, aromatic, and heteroaromatic moieties.
163. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 4-fluorophenyl.
164. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 4-phenoxyphenyl.
165. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 3-(4-methylphenoxy)phenyl.
166. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 3-methyl-4-methoxyphenyl.
167. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 3-(3,4-dichlorophenoxy)phenyl.
168. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 2-methylphenyl.
169. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 3-(4-chlorophenoxy)phenyl.
170. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 2,5-dimethyl-4-methoxyphenyl.

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171. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 4-trifluoromethoxyphenyl.
 172. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 2-chlorophenyl.
 173. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 2-fluoro-3-trifluoromethylphenyl.
 174. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 3-bromo-4-methoxyphenyl.
 175. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 4-bromophenyl.
 176. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is phenyl.
 177. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 4-methylphenyl.
 178. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 4-chlorophenyl.
 179. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 4-acetamidophenyl.
 180. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 2,5-dimethoxyphenyl.
 181. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 4-diethylaminophenyl.
 182. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 3-methylphenyl.

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183. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 2-hydroxy-3-methoxyphenyl.
- 04 184. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 4-phenylphenyl.
185. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 3,4-dibenzyloxyphenyl.
186. (New) The method of any one of claims 68, 138, or 142, wherein said substituted β -amino anionic compound is $\text{RCH}(\text{NH}_2)\text{CH}_2\text{COOH}$, wherein R is 3-[(3-trifluoromethyl)phenoxy]phenyl.
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